EPOXY FLOORING SYSTEM FOR – ENGINEERING, FABRICATION WORKSHOPS & HEAVY MANUFACTURING PLANTS

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Introduction

Engineering and fabrication workshops along with heavy manufacturing plants require flooring systems that can **withstand heavy mechanical loads, frequent impact, and exposure to oils, lubricants, and industrial fluids.** The floors must resist abrasion, vibration, and the movement of heavy trolleys or machinery while maintaining strength and surface integrity.
The **Epoxy Flooring System for – Engineering, Fabrication Workshops & Heavy Manufacturing Plants is a high-build, heavy-duty epoxy flooring system** designed for **load-bearing strength, abrasion resistance, and long-term durability. Applied at a minimum thickness of 3000 microns,** this system ensures consistent protection under the most demanding workshop environments.

Recommended Use Cases

- Engineering and fabrication workshops
- Heavy machine assembly areas
- Component repair and maintenance workshops
- Metal works and industrial manufacturing floors
- Toolmaking and machining zones

Step-Wise System Description

Step 1: Surface Preparation

Proper substrate evaluation and preparation are critical for long-term system performance.
All necessary surface repairs, including crack filling or substrate restoration, must be completed prior to the application of any epoxy flooring materials. Ressichem offers a range of suitable crack fillers and repair compounds, including non-shrink cementitious grouts, specifically designed for surface preparation and repair.
- **Concrete strength verification** is essential before coating. The required compressive strength should be defined by the project consultant based on expected mechanical load.
- Conduct surface strength testing using **destructive (core testing)** where feasible and n**on-destructive methods**, such as a **Schmidt Hammer Test,** to ensure substrate suitability.
- For **major repairs (12 mm and above),** use **Ressi NSG 710, a high-strength, non-shrink cementitious grout** capable of achieving high compressive strength suitable for industrial restoration.
- For **minor surface repairs and voids, blend Ressi EPO Primer LV with Ressichem's washed, graded, and completely dried silica sand (zero moisture content)** to form a strong epoxy-sand mortar for patching and surface correction.
- Mechanically prepare the substrate through shot blasting or grinding, followed by vacuum cleaning to remove dust, oil, and laitance. This step is especially important if there is old oil, grease or any penetrative material previously present in the concrete. Old contaminants need to be completely cleared out prior to any Epoxy treatment over the cementitious floor surface.

Step 2: Application of Ressi EPO Primer LV

Apply **Ressi EPO Primer LV**, a solvent-free, low-viscosity epoxy primer formulated to deeply penetrate and seal the substrate for optimal adhesion.
- Mix resin and hardener components accurately according to the datasheet.
- Apply evenly using a trowel or epoxy squeegee, ensuring complete surface coverage.
- Allow the primer to cure under controlled temperature and humidity conditions before proceeding.

Step 3: Application of Ressi EPO Mid Coat S – GP (Optional)

Apply **Ressi EPO Mid Coat S – GP**, a **compulsory high-build epoxy layer** providing structural strength, levelling, and resilience under heavy traffic.
- Apply using a **notched trowel or epoxy** squeegee for a dense, uniform build.
- Recommended **minimum thickness: 1000 microns**, with **2000 microns preferred** for enhanced performance and surface smoothness.
- Allow full curing before the next application stage.

Step 4: Application of Final Epoxy Topcoat

Apply **Ressi EPO Floor Plus** or **Ressi EPO Floor Plus Econo,** depending on the project's aesthetic and cost considerations.
- **Ressi EPO Floor Plus:** Offers customizable color options for a polished appearance.
- **Ressi EPO Floor Plus Econo:** Economical version available in standard grey with identical performance properties.
- Apply using a **high-build epoxy squeegee or trowel to a minimum thickness of 2000 microns.**
- Allow **48–72 hours** before permitting light use and **7 days** for full mechanical and chemical curing.

Step 5: Floor Markings (If Required)

For workflow zoning, safety markings, or equipment pathways, apply **Ressi EPO Gloss Might** in contrasting colors.
- Apply with a **roller** after the main epoxy system has fully cured.
- For cost-effective options, **Ressi EPO Roll Coat** may be used for lane or boundary markings.

Note:
- The **total system thickness must be a minimum of 3000 microns** to meet heavy-duty performance requirements.
- Always refer to the **Technical Datasheets (TDS)** for detailed mixing, curing, and application parameters before installation.

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System Advantages

- **High Mechanical Strength:** Withstands vibration, equipment load, and impact stress.
- **Chemical Resistance:** Performs effectively against oils, lubricants, and cleaning agents.
- **Repair Compatible:** Accepts both epoxy and cementitious repair systems without adhesion loss.
- **Customizable Appearance:** Available in standard or color-customized finishes.
- **Seamless and Dense Build:** Non-porous system prevents dusting and facilitates easy cleaning.
- **Long-Term Performance:** Engineered for durability under heavy industrial conditions.

Maintenance Guidelines

- Clean floors with mild, neutral detergents; avoid harsh solvents or acidic agents.
- Inspect regularly for impact damage or wear in high-traffic zones.
- Recoat or refurbish as required to maintain film thickness and aesthetics.
- Prevent prolonged chemical pooling and ensure proper drainage.

System Summary Table

Parameter	Description
System Name	Epoxy Flooring System for – Engineering & Fabrication Workshops
Area Type	Heavy-Duty Industrial, Engineering & Fabrication Environments
Traffic Exposure	Heavy Equipment, Forklifts, Machinery, and Impact Loads
Primary Requirements	Strength, Abrasion Resistance, Oil & Chemical Resistance
Primer	Ressi EPO Primer LV
Mid Coat (Optional)	Ressi EPO Mid Coat S – GP (1000–2000 microns)
Topcoat	Ressi EPO Floor Plus / Ressi EPO Floor Plus Econo (2000 microns)
Marking Coat (Optional)	Ressi EPO Gloss Might / Ressi EPO Roll Coat (Contrasting Colors)
Silica Used	Washed, graded, and completely dried (zero moisture content) silica sand
Total System Thickness	Minimum 3000 Microns
Application Method	High-Build Trowel or Epoxy Squeegee (Roller Only for Markings)
Finish Type	Smooth, Semi-Gloss
Curing Time Before Use	48–72 Hours for Light Use / 7 Days for Full Cure
Key Benefits	Heavy Load Endurance, Chemical Resistance, Easy Maintenance, Long Service Life

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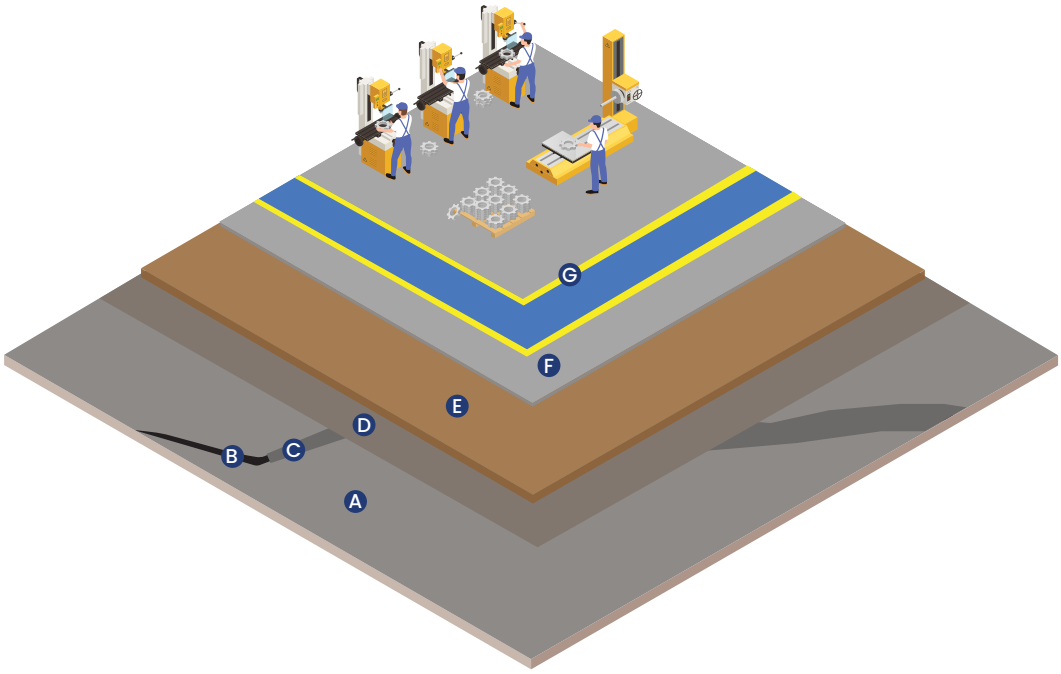
Conclusion

The **Epoxy Flooring System for – Engineering & Fabrication Workshops** provides a **robust, high-strength, and chemically resistant flooring solution** for demanding industrial environments.
The sequence — Surface Preparation, Ressi EPO Primer LV, Ressi EPO Mid Coat S – GP, Ressi EPO Floor Plus or Floor Plus Econo, (Optional) Ressi EPO Gloss Might or Roll Coat — ensures **superior mechanical strength, load endurance, and long-term** protection against industrial stresses.

System Summary



A) Cementitious Surface: (Concrete slab or screed)
B) Cracks and surface damage
C) Crack Filler and Repairing Materials
D) Ressi EPO Primer LV
E) Ressi EPO Mid Coat S – GP
F) Ressi EPO Floor Plus / Ressi EPO Floor Plus Econo
G) Ressi EPO Gloss Might / Ressi EPO Roll Coat (Marking)

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